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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/604,840	08/21/2003	CHIN-TE HO	10607-US-PA	1839

31561 7590 02/09/2005

JIANQ CHYUN INTELLECTUAL PROPERTY OFFICE  
7 FLOOR-1, NO. 100  
ROOSEVELT ROAD, SECTION 2  
TAIPEI, 100  
TAIWAN

EXAMINER

CHANG, JOSEPH

ART UNIT PAPER NUMBER

2817

DATE MAILED: 02/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/604,840	<b>Applicant(s)</b> HO, CHIN-TE	
	<b>Examiner</b> Joseph Chang	<b>Art Unit</b> 2817	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

## DETAILED ACTION

### *Specification*

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: A phase locked loop circuit using a counter to compare two frequency values.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamashita, US Patent No. 5,929,670.

Regarding Claims 1 and 9, Yamashita discloses a method and a circuit (Fig.1), comprising a counter (15, 14, 13), for obtaining a first value (15 counted value) and a second value (14 counted value) by respectively counting an input signal (16) with a first frequency (output of 16) received by the circuit (Fig.1) and counting an output signal with a second frequency, wherein a third value (value of 13) is obtained by comparing the difference of the first value and the second value; and an oscillator (11) for generating the output signal (to 12).

Yamashita does not explicitly disclose specific functional limitations reciting an voltage controlled oscillator that obtains the third value from the counter, modifying the frequency of the output signal in response to the third value for the circuit being a phase lock loop and the first and second frequencies counted within the same one cycle period.

As implied by the Yamashita disclosure showing well known PLL and claims in Col. 4, the oscillator 11 would have been controlled by the third value (control means, output of 13), and the counter counting frequencies within the same one cycle period (Col.3, lines 38-49) in order to determine frequencies of inputs.

Accordingly, it would have been obvious to one of ordinary skill in the art to recognize that the oscillator 11 is a voltage controlled oscillator that obtains the third value (control means value of 13) from the counter (15, 14, 13), modifying the frequency of the output signal (15) in response to the third value for the circuit being a phase lock loop and the first and second frequencies counted within the same one cycle period because such arrangement would have been implied by Yamashita.

Regarding Claims 2 and 10, such a way of modifying the second frequency (11) (speed of second frequency being faster or slower based on the third value) would have been obvious to one of ordinary skill in the art to recognize because Col. 3, line 47,  $F_i = (N_1/N_2) \times F_r$  implies such a way of modifying the second frequency as recited in the claims.

Regarding Claims 3-5, 11-13, such first and second frequency dividers would have been obvious based on the frequency adjustment and frequency band selections as desired as well known arrangement in the PLL circuit.

Regarding Claims 6 and 14, such loop filter would have been obvious based on the filtering ac component of the control signal in the PLL circuit.

Regarding Claims 7 and 15, such a crystal oscillator would be obvious based on the accurate and known frequency precision of external standard frequency signal source in the PLL circuit.

Regarding Claims 9-16, such a programmable counter would have been obvious based on automation of changing frequency band as desired in the PLL circuit.

### ***Conclusion***

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The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Abbate et al. discloses a frequency comparator having a counter circuit.

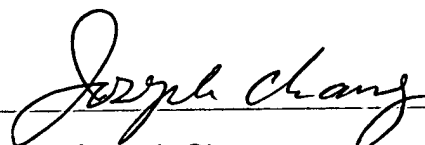
Sharpe discloses a PLL with a programmable divider.

Chiu discloses a frequency comparator having counters.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Chang whose telephone number is 571 272-1759. The examiner can normally be reached on Mon-Fri 0700-1730.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on (571) 272-1769. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in cursive script, reading "Joseph Chang", positioned above a horizontal line.

Joseph Chang  
Patent Examiner  
Art Unit 2817